Oral Rehabilitation of the Patient with Cheilognathopalatoschisis

Denis Vojvodić[1]
Vjekoslav Jerolimov[2]
Davor Jokić[1]
Ante Lončar[3]

[1]Department of prosthodontics
School of Dental Medicine
University of Zagreb
[1]Clinical Department of
Prosthetic Dentistry
Clinical Hospital "Dubrava",
Zagreb
[2]Clinic for Maxillofacial surgery
Clinical Hospital "Dubrava",
Zagreb
[3]Health Center Črnomerec,
Zagreb

Summary

Although cleft palate patients are not regularly seen in general dental practice, their number is not negligible. Prosthodontic treatment of such patients requires good planning, taking into account the remaining teeth and roots, deformation of maxillary segments, residual palatal defect and the disproportion between the upper and lower alveolar ridge.

The authors describe prosthetic therapy of a cleft palate patient using root copings, modified Dolder bar, cone and veneer crowns with rests and metal base partial prosthesis, with the aim of providing satisfactory function, aesthetics and alleviation of the deformities.

Key words: *cheilognathopalatoschisis, oral rehabilitation.*

Acta Stomat Croat
2000; 329-330

CASE REPORT
Received: October 25, 2000

Address for correspondence:

Doc. Denis Vojvodić DMD, PhD
Clinical Department of
Prosthodontics
Clinical Hospital "Dubrava"
Av. G. Šuška 6, 10000 Zagreb
Croatia

Introduction

Although patients with cheilognathopalatoschisis (cleft palate and lip) are not often seen in general dental practice their number is not negligible. This congenital anomaly is one of the most frequent ones; it appears in of 1.5 promil of the new-born, and is twice as frequent in boys (1).

Cleft palate/lip aetiology is still unknown, although possible causes are malnutrition and psychic stress during pregnancy, teratogenic agents, infectious agents (viruses), irradiation during pregnancy, and heritage (2,3), so one third to one half of the patients have a previous occurrence of this anomaly in their family (1,2).

After surgical treatment definitive deformation of the orofacial region depends on the existing cleft and the original size of the maxillary alveolar ridge, distance between the maxillary segments, surgical technique used, treatment quality and scar tissue growth. Consequently, repeated operations sometimes lead to an increase in the deformity (new scar tissue), instead of correction, and therefore it is better if there are less operative procedures. Such procedures have drastic negative effect on maxilla growth (4) which is reduced in all dimensions (5).

Scar tissue growth is also called maxillary ankylosys (6). Consequences are worse if the scars are closer to the teeth (7). These changes finally result in a typical concave shape of the face (8,9).

For treatment of such a complex problem a team of different medical and dental specialists is needed. The required specialists in the dental field are an oral surgeon, orthodont, pedodont and finally a prosthodontist. The task of the prosthodontist is to restore the lost teeth and parts of the alveolar ridge in order to obtain function and aesthetics, and thus alleviate the deformities.

Clinical report

A girl, 23 years of age, with surgically and orthodontically treated unilateral cleft lip and palate was examined in the Clinical Department of Prosthodontics at the Clinical Hospital "Dubrava". Scars of the upper lip and characteristic pseudo-progenic facial profile with collapsed nose tip were noticed (Fig. 1). Dental status before treatment: in the upper jaw the left medial and lateral incisor (cleft location), left and right second premolar, right second molar were missing. Right medial and lateral incisor and right canine only had roots that were endodontically treated (ET), but inadequately (Fig. 2). Chewing ability and aesthetics were very poor because of the lost teeth and characteristic maxillary deficiency. Endodontic treatment of all non-vital teeth was performed. Root canals of the upper right medial and lateral incisor and right canine were prepared for the retention of the root copings. Remaining upper premolars and molars were prepared so that crowns could be made.

Heavy body silicone impression (Optosil P, Bayer Dental, Leverkusen, Germany) was made. Vaseline gauze was placed over the palatal defect in order to prevent entrance of the light body silicone (Xantopren L, Bayer Dental, Leverkusen, Germany) into the palatal defect. If a part of the impression material had entered the palatal defect region its pedicle could break during removal of the impression and cause difficulty in removing the retained part of the impression material (10). However, impression of the palatal defect is not needed for making the prosthetic appliance.

On the upper left canine and upper left first molar cone crowns were made. On the upper first molars (both sides) and upper right first premolar modified veneer crowns and the veneered pontic substituting upper right second premolar were made. Vertical dimension of occlusion was determined according to the rule 3 mm below the rest position (11). On the upper right medial and lateral incisor and canine that were endodontically treated the root copings connected with a modified Dolder bar (Servo Dental, Hagen, Germany) were made. This solution was chosen to provide good retention and aesthetics giving greater freedom for correct tooth positioning and a more favourable loading condition for abutment roots (Fig. 3) (12,13,14). All metal parts of the fixed prosthetic appliances were cast in gold-platinum alloy (18+8, Precious Metals Refinery, Zagreb, Croatia). Over these prosthetic appliances corrective silicone impression was taken as previously mentioned (Fig. 4) for production of a partial removable denture metal base which was made of Co-Cr alloy (Remanium GM 380, Dentaurum, Pforzheim, Germany). Outer cone crowns were soldered with the metal base and modified Dolder bar male part was also mounted. Acrylic teeth were placed onto the metal base of the partial removable denture in a way suitable for obtaining maximal intercuspidation with the lower jaw teeth, where also, a classic bridge with polymer veneers (Chromasit, Ivoclar, Schaan, Liechtenstein) was made (Fig. 5). Despite the deformities the prosthetic appliance had satisfactory occlusion and aesthetics and ameliorated the patient's concave facial profile (Fig. 6).

Conclusion

For successful treatment of cleft palate patients, it is necessary to maintain all the remaining teeth and/or roots (even those which appear unsuitable) in order to obtain good retention. During the planning of prosthetic therapy one should take into consideration the deformation of maxillary segments, eventually residual palatal defects, as well as the disproportion between the upper and lower jaw alveolar ridge. Well planned prosthetic therapy will result in satisfactory function and aesthetics of a cleft palate patient.